

**IN THE SPECIFICATION:**

Please amend the paragraph beginning at page 10, line 22, as follows:

As shown in FIG. 1, the microscope system in the first embodiment comprises a microscope 10 and an autofocus (AF) device. The AF device includes a camera head ~~[[31]]~~ 310 connected with the microscope 10, an image processing unit 33 and a video monitor 34. The microscope 10 includes a stage 20 on which a specimen is placed, an objective lens 14, a lens barrel 16, an eyepiece lens 17, an upright barrel 18, a light source 12, a condenser lens 13 and a main body of 11 supporting the members listed above. It is to be noted that the objective lens 14, the lens barrel 16 and the upright barrel 18 constitute an image forming optical system that forms an image of the specimen placed on the stage 20, whereas the objective lens 14, the lens barrel 16 and the eyepiece lens 17 constitute an observation optical system that enables a user to directly observe the specimen.

Please amend the paragraph beginning at page 11, line 12, as follows:

The camera head ~~[[31]]~~ 310 of the AF device is attached to the upright barrel 18. In addition, a stage drive unit ~~[[21]]~~ 210 that causes the stage 20 to move along the optical axis of the objective lens 14, i.e., along the vertical direction (along a z axis), is disposed in the main body 11. The stage drive unit ~~[[21]]~~ 210, which includes a motor for driving the stage 20 and a mechanical unit, is connected to the image processing unit 33 via a signal line ~~[[22]]~~ 220. While

the AF device is engaged in operation, the stage drive unit ~~[[21]]~~ 210 controls the drive of the motor in conformance to a signal output from the image processing unit 33. The AF device searches for a focused position or a focus-match position by causing the stage 20 to move along the z axis through motor drive.

Please amend the paragraph beginning at page 12, line 17, as follows:

When observing a specimen or a test piece placed between the slide glass 1 and a cover glass and held by the specimen holder 21 on the stage 20 in the microscope system described above, light emitted from the light source 12 is condensed at the condenser lens 13 and is then irradiated onto the specimen on the slide glass 1. Light reflected off the specimen travels through the image forming optical system constituted of the objective lens 14, the lens barrel 16, the upright barrel 18 and the like and forms an optical image at an image-capturing surface of a CCD (not shown) provided inside the camera head ~~[[31]]~~ 310. The optical image of the specimen is converted to an image signal at the CCD, and the image signal is then provided to the image processing unit 33 via a signal line ~~[[32]]~~ 320. The image processing unit 33 displays the image as a visual image at the monitor 34. In addition, the user is allowed to directly observe the specimen image through the eyepiece lens 17.

Please amend the paragraph beginning at page 14, line 3, as follows:

The image processing unit 33 includes an internal CPU 33b and an internal memory 33c. The CPU 33b has a contrast detection function and an AF function. More specifically, the CPU 33b processes an image taken into the camera head [[31]] 310 and detects the contrast in the image by executing a contrast detection program read from the memory 33c where the program is pre-installed. In addition, the CPU 33b executes an AF control program read from the memory 33c where the control program is pre-installed and thus executes an AF operation by moving the stage 20 ultimately to the focused position.

Please amend the paragraph beginning at page 16, line 10, as follows:

In step [[204]] S204, the CPU 33b outputs a control signal to the stage drive unit [[21]] 210 and causes the stage 20 to move over the search range having been set, i.e., over the range extending from the coordinate Zmin to the coordinate Zmax. In step S205, the CPU 33b detects the contrast of the image taken into the camera head [[31]] 310 at predetermined sampling intervals while the stage 20 travels from the coordinate Zmin to the coordinate Zmax. The CPU 33b then profiles the relationship between the detected contrast value and the Z coordinate of the stage 20.

Please amend the paragraph beginning at page 17, line 2, as follows:

In step S209, the z coordinate  $Z_f = Z_1$  at the peak point of the contrast is ascertained and the coordinate  $Z_1$  is designated as the focused position for the point A. In step S210, the CPU 33b outputs a control signal to the stage drive unit ~~[[21]]~~ 210 so as to move the stage 20 to the coordinate  $Z_1$  of the detected focused position. Driven by the motor at the stage drive unit ~~[[21]]~~ 210, the stage 20 travels to the coordinate  $Z_1$  of the focused position and then stops. Thus, the user is able to observe the specimen 601 in a state in which the objective lens 14 is focused on the point A of the specimen 301.